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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Emyr Philips

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EXAMINER

ZUCKER, PAUL A

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,979	<b>Applicant(s)</b> PHILIPS ET AL.	
	<b>Examiner</b> Paul A. Zucker	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-16 and 18-25 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Current Status***

1. This action is responsive to Applicants' amendment of 2 April 2009.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Applicant's addition of new claims 25 is acknowledged.
4. Claims 1-25 are pending.
5. The objection to the specification set forth in paragraph 1 of the previous Office Action in Paper No 8 is withdrawn in response to Applicant's amendment.
6. The rejections under 35 USC § 112, second paragraph, set forth in paragraphs 2 - 4 of the previous Office Action mailed 4 December 2008 are withdrawn in response to Applicants' amendment.
7. The rejection under 35 USC § 102 set forth in paragraph 5 of the previous Office Action mailed 4 December 2008 are withdrawn in response to Applicants' amendment and in favor of the new rejection below.
8. The rejection under 35 USC § 103 set forth in paragraph 6 of the previous Office Action mailed 4 December 2008 are withdrawn in response to Applicants' amendment and in favor of the new rejection below.

=====  
***New Objections and Rejections***  
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***Claim Rejections - 35 USC § 102***

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 13-16, 18 and 23 are finally rejected under 35 U.S.C. 102(b) as being anticipated by Whitton et al (US 3,265,752 08-1966). Whitton discloses (Column 2, lines 21-50) compositions comprising styrene and N-hydroxymorpholine which corresponds to a cyclic unhindered hydroxylamine as is presently required. Whitton therefore anticipates claims 13-16, 18, 23 and 24.

***Examiner's Response to Applicants' Remarks With Regard to This Rejection***

10. Applicants' amendment to the claim 13 does not limit the composition to single monomer since the open limitation "comprising" allows for the presence of more than one monomer. Applicants do not separately address the 102 and 103 rejections. Applicants' arguments with regard to the 103 rejection are addressed below.

Applicant's arguments filed 4 December 2008 have been fully considered but they are not persuasive for the reasons set forth above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966),

that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 13-16 and 18-23 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Whitton et al (US 3,265,752 08-1966) in view of Arhancet et al (us 5,446,220 08-1995).

Instantly claimed is a polymerization inhibitor composition comprising an ethylenically unsaturated monomer and a cyclic non-hindered hydroxylamine.

Whitton teaches (Column 2, lines 21-50) compositions comprising styrene and N-hydroxymorpholine which corresponds to a cyclic unhindered hydroxylamine as is

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presently required. Whitton teaches (*ibid*) that N-hydroxymorpholine is much more effective as an inhibitor than the corresponding acyclic compound.

The difference between the process taught by Whitton and that instantly claimed is that Whitton does not appear to contemplate the use of more than one inhibitor in his compositions while such use is instantly claimed.

Arhancet, however, teaches (Abstract) the use of a combination of a dinitrophenol compound and a hydroxylamine compound for the prevention of the polymerization of styrene. Arhancet teaches (Column 2, line 44-column 3, line 3) the use of compositions comprising dinitrophenols and dialkylhydroxylamines. Arhancet teaches (Column 3, lines 39-48 and column 4, lines 27-45) component weight ratios within the instantly claimed range.

Thus one of ordinary skill in the art would have been motivated to replace the acyclic dialkylhydroxylamine compound of Arhancet with the N-hydroxymorpholine of Whitton compound with the reasonable expectation for success in obtaining an inhibitor composition having improved properties over that taught by Arhancet.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

***Examiner's Response to Applicants' Remarks With Regard to This Rejection***

12. Applicants' have presented arguments with regard to this rejection. The Examiner responds to these below:

- a. As discussed above, Applicants' amendment to the claim 13 does not limit the composition to single monomer since the open limitation "comprising" allows for the presence of more than one monomer. Applicants do not separately address the 102 and 103 rejections. Applicants' arguments with regard to the 103 rejection are addressed below.
- b. Applicants' argue that Whitten teaches that only the combination of N-hydroxymorpholine and diethylhydroxylamine is shown by Whitten to be effective in preventing polymerization. The Examiner disagrees and points out that N-hydroxymorpholine is alone is shown (Table I, 4<sup>th</sup> entry) to be effective by Whitten.
- c. Applicants argue that one of ordinary skill in the art would not have been motivated to substitute the N-hydroxymorpholine for the hydroxylamine due to the specificity of the inhibition of polymerization in both cases. The Examiner disagrees and responds that: Arhancet teaches (Column 1, lines 30-38) the inhibition of polymerization of vinyl aromatics which correspond to the styrene compositions of Whitten who actually uses a compound of Arhancet with N-hydroxymorpholine and alone (See Whitten, Table 1). The combination of Whitten and Arhancet is therefore natural for one of ordinary skill in the art.
- d. In response to Applicants' argument regarding the patentability of independent claim 24, the Examiner point out that the rejection set forth above does not reject newly amended claims that require 1-hydroxypiperidine

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Applicant's arguments filed 4 December 2008 have been fully considered but they are not persuasive for the reasons set forth above.

13. Claims 13-16, 18, 19 and 23-25 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al (US 3,417,154 12-1968).

Instantly claimed is a polymerization inhibitor composition comprising an ethylenically unsaturated monomer and a cyclic non-hindered hydroxylamine.

Albert teaches (Column 2, line 63 – column 3, line 18) a method for stabilizing styrene using an adduct formed from a hydroxylamine compound and a polyphenol inhibitor. Albert teaches (Column 3, lines 19-38) a method for stabilizing acrylonitrile as well using the same adducts.

The difference between the process taught by Albert and that instantly claimed is that the use of 1-hydroxypiperidine is instantly claimed while Albert exemplifies the use of diethylhydroxylamine.

Albert, however, specifically suggests (Column 1, lines 11-33, see also column 2, lines 43-58) the use of the hydroxylamines N-hydroxypiperidine and N-hydroxymorpholine in the methods of his invention.

Thus one of ordinary skill in the art would have been motivated to make the instant invention by Albert's suggestion to do so. There would also, therefore, have been a reasonable expectation for success in making the instantly claimed invention.



Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

***Claim Objections***

14. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Allowable Subject Matter***

15. Claim 17 is drawn to allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art, Whitton et al (US 3,265,752 08-1966), Arhancet et al (us 5,446,220 08-1995) and Albert et al (US 3,417,154 12-1968) either alone or in combination, neither disclose nor fairly suggest the instantly claimed inhibitor compositions.

***Conclusion***

16. Claims 1-25 are pending. Claims 13-16 and 18-24 are finally rejected. Claim 17 is finally objected to. Claims 1-12 are held withdrawn from consideration as being drawn to a non-elected invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul A. Zucker/  
Primary Examiner, Art Unit 1621